

**SYSTEM, APPARATUS, AND METHOD FOR DRIVING LIGHT EMITTING  
DIODES IN LOW VOLTAGE CIRCUITS**

**ABSTRACT**

5           A system, apparatus, and method for allowing LED operation in  
circuits operating with power supply levels that are below the forward voltage limits  
of the LED. A first level of a modulated voltage signal is applied to charge a voltage  
increasing component in a first phase of operation. A second level of the modulated  
voltage signal is then summed with the voltage stored across the voltage increasing  
10 component to provide adequate forward potential across Light Emitting Diode (LED)  
for illumination. The second level of modulated voltage is also used to provide a  
source of constant forward current to be conducted by LED when in its luminescent  
state.